

Application No. 10/668,444
Attorney Docket No. 135487CT (15051US01)

REMARKS

The present application includes claims 1-22. Claims 1-3, 12-15, and 21-22 were rejected. Claims 4-11 were objected to. Claims 16-20 have been allowed. By this Amendment, claim 4 has been amended to be rewritten in independent form.

Claims 4-11 were objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. By this response, claim 4 has been amended in independent form. Therefore, claim 4 and its dependent claims 5-11 should be allowable. The Applicant appreciates the allowance of claims 4-11 as well as 16-20.

Claims 1-3 and 12-14 were rejected under 35 U.S.C. §102(b) as being anticipated by Liu (U.S. Pat. No. 6,118,846).

Claims 1 and 2 were rejected under 35 U.S.C. §102(e) as being anticipated by Mendis et al. (U.S. Pat. App. Pub. No. 20050030394).

Claim 15 was rejected under 35 U.S.C. §103(a) as being unpatentable over Liu and further in view of Suzuki (JP 110-27523 A).

Claims 21 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Liu.

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The Applicant first turns to the rejection of claims 1-3 and 12-14 under 35 U.S.C. §102(b) as being anticipated by Liu. Liu generates a memory map of bad pixel *columns* (col. 2, lines 25-31). Then, a plurality of adjacent pixels columns are selected on either side of the bad column, and a preset number of defective columns are also treated as defective or bad columns (col. 2, lines 32-40). Next, a mean column value is calculated for each column, ignoring bad column values (col. 2, lines 41-47). Then, a distortion coefficient is calculated using baseline values for all columns and is applied to individual pixels in each column (col. 2, lines 48-57). In an embodiment, columns may be divided into overlapping sub-arrays of rows instead (col. 2, lines 58-64). An accuracy indicator may be calculated for sub-arrays (col. 2, line 65 – column 3, line 8).

Thus, Liu is concerned with bad pixel lines or *columns*, not individual cells (Abstract; col. 2, lines 8-22). Liu does not disclose forming an initial estimate for a malfunctioning cell in an array of detector rows using cells in a same detector row and projection view as the malfunctioning cell be an interpolation of a signal of the malfunctioning cell, wherein the interpolation comprises summing a product of interpolation coefficients and signals of channels in the same detector row and projection view and the malfunctioning cell. These limitations are recited in independent claim 1 of the present application. Additionally, Liu does not disclose adjusting the initial estimate according to an accuracy of estimates performed on at least one of a nearest pair of neighboring detector rows, wherein each member of the pair of rows is an equal distance

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above or below the detector row with the malfunctioning cell and wherein at least one of the members has a good cell. These limitations are also recited in claim 1.

With respect to independent claim 12 of the present application, Liu does not discuss use of projection views for a channel. Additionally, Liu does not disclose obtaining average readings of adjacent cells. Furthermore, Liu does not disclose comparing average readings between adjacent cells over all projection views for a channel to identify one or more malfunctioning cells. These limitations are recited in claim 12. Liu also does not further teach measuring a difference between a first reading from a detector cell and at least second and third readings from neighboring cells and using the difference between the first, second and third readings to identify a malfunctioning cell, as recited in claim 13 of the present application.

Therefore, the Applicant respectfully submits that claims 1-3 and 12-14 of the present application should be allowable.

The Applicant next turns to the rejection of claim 1 and 2 under 35 U.S.C. §102(e) as being anticipated by Mendis et al. In Mendis, no initial estimate of a malfunctioning cell is obtained, and no adjustment of that initial estimate is performed, as recited in claim 1. Rather, Mendis simply identifies bad pixels by testing with a sensor (para. [0014]) and merely replaces bad pixel values with an average of the nearest neighbors that are not defective (para. [0014]). Additionally, Mendis provides that nearest neighbors are immediate neighbors in a monochromatic sensor, but nearest

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neighbors in a color sensor are pixels of the same color as the bad pixel (para. [0015]). Thus, Mendis does not disclose the estimation and adjustment of a malfunctioning cell in a detector array as recited in claims 1 and 2. Therefore, claims 1 and 2 should be allowable.

The Applicant now turns to the rejection of claim 15 under 35 U.S.C. §103(a) as being unpatentable over Liu and further in view of Suzuki. As discussed above, Liu does not teach or suggest the limitations of independent claim 12 of the present application. Similarly, Liu does not teach or suggest the limitations of claim 15, which depends from claim 12. Liu does not teach or suggest generating an alert identifying one or more malfunctioning cells. Further, Suzuki does not teach or suggest generating an alert that identifies one or more malfunctioning cells, as recited in claim 15. Suzuki also does not teach or suggest comparing average readings between adjacent cells over all projection views for a channel to identify one or more malfunctioning cells, as recited in claim 15 and its independent claim 12. Rather, Suzuki only specifies that the alarm generating unit (127) generates an alarm when a defective pixel is detected, but does not convey or identify which cell is defective or malfunctioning (Abstract).

The Applicant submits that it would not have been obvious to modify the alarm of Suzuki given the surrounding system, and, even if the alarm were modified, the initial estimate and adjustment of malfunctioning cell value as recited in claim 15 are neither

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taught nor suggested by either Liu or Suzuki. Therefore, the Applicant respectfully submits that claim 15 is allowable.

The Applicant then turns to the rejection of claims 21 and 22 under 35 U.S.C. §103(a) as being unpatentable over Liu. As discussed in detail above, Liu relates to correcting a defective pixel column. However, Liu does not teach or suggest examining an application-specific integrated circuit (ASIC) in an imaging system. Liu does not teach or suggest mapping the ASIC to optimize opportunities for error correction. Such mapping is not obvious in light of Liu but represents a patentable improvement along with the other limitations of claim 21. Additionally, Liu does not teach or suggest identifying at least one of a malfunctioning data acquisition system channel and a malfunctioning ASIC. Furthermore, Liu does not teach or suggest applying a correction scheme to reduce an error due to the at least one of a malfunctioning channel and a malfunctioning ASIC. Such limitations are recited in independent claim 21 of the present application. In addition, Liu does not teach or suggest estimating a value of the at least one of a malfunctioning channel and a malfunctioning ASIC, performing a same estimation on rows adjacent to a row including a cell connected to the at least one of a malfunctioning channel and a malfunctioning ASIC, and using a difference between said estimating and said performing steps to refine said value. Rather, Liu focuses on pixel columns. These limitations are recited in claim 22 of the present application.

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Therefore, the Applicant respectfully submits that claims 21 and 22 of the present application should be allowable.

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CONCLUSION

The Applicant respectfully submits that the application is in condition for allowance. If the Examiner has any questions or the Applicant can be of any assistance, the Examiner is invited and encouraged to contact the Applicant at the number below.

The Commissioner is authorized to charge any necessary fees or credit any overpayment to the Deposit Account of GTC, Account No. 070845.

Respectfully submitted,

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